ABSTRACT

The invention allows a cluster tool to change from a first recipe to a second recipe, while preserving periodicity and ensuring that there are no delays at critical points. This procedure is referred to as recipe cascading. Cascading involves emptying a first lot of wafers off a cluster tool and populating the cluster tool with another lot of wafers, serially and simultaneously. The procedure is performed with no delays incurred at critical process steps; and with no additional robots and process modules other than those called for by the recipe and throughput requirements of the entering and the exiting lots. The entering lot may also have different recipes and throughput requirements from the exiting lot. A program residing on a computer determines a schedule for the cluster tool which enables recipe cascading. The program may use a genetic algorithm to determine the schedule, or any other optimization technique.